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poke about under the piles of fern and look into the corners of the canoes. The women are given permission to bring back a few nuts for their own households. All the nuts in the canoes are removed to the beach by the guard, counted out one by one, and (nowadays) the total written down on paper. Once when the guards doing this were two youths who had just attained adulthood (*wakatane*), it was amusing to see the way they officiously examined the canoes of two elderly men who had gone to Motu Kotawa with the women. The older men, though obviously annoyed with the inquisition, did not dare to make any comment. It is only after the canoes have been given a clearance at this beach that they are allowed to proceed to another beach, nearest to the talo beds, to unload the cargoes of fern leaves.

When a village meeting decides that the villagers shall go to the reserves Ko or Kotawa, for a period to work the talo beds or to procure nuts, the matter is announced to the village by the guard, because it is the guard that oversees this visit and makes sure that none brings from the reserves more than the agreed amount of foods. A typical announcement of this nature, made in Ngake, which has extensive talo beds on Motu Ko, is:

Wakalongolongo mai kolua ki te vananga ko avatu ki to tama lulu. Kawo loa tana ki te motu. Ko tana mea ka aumai: E takiyaea te niu papaku, e takiyepulupulu te niu. Yau na mea a te tinitu ka aumai: E takimatawelau te wawa. E takiyepulupulu te tamaliki. Ke wo tana ki te motu nei, e ya te kaveu, e ya te ngongo, e ya te lakia, e ya te kaka ia, e ya te lupe, e ya te kaipea, e ya te unga, e ya te wuti, e ya te ngangie. Ko te wui mea ia e wakayatia i to tana motu. Ka nono tana i ai e witu po, womamai loa tana. Oti ai.

Listen you to the report to be given to our village. We shall go to the reserve. These are our things we shall bring back: 20 mature nuts each, 10 drinking nuts each. Next the things of the women which they will get: 100 tubers of talo each. For each child, 10 drinking nuts. When we go to the reserve, the crabs (enumerated) and the birds (enumerated), bananas, and *apangie* wood will be tapu. Those are the things to be tapu in our reserve. We shall stay there for seven nights, then return. That is all.

Throughout the stay on the reserve, the guard reports each night the events of the day, makes sure by inspection visits during the day that the tapu foods are not being touched, and when the time comes to return, goes from house to house, counting the nuts piled up ready for the return trip. Visits to the reserve of Ngake were formerly made on such occasions as follows:

At times fixed by the chief of Ngake and the council of men, all the men would go to Motu Ko to collect nuts and to fish. Young men wishing to go to the reserve at other times to net birds or for whatever purpose, had to procure permission previous to the visit. At one time, it was customary for parties of three or four men to be given permission to fish from the outer reefs of the reserve. Permission was granted for a three days' stay only, and if the men stayed longer than this period, they were automatically considered thieves and treated as such on their return. At other times, at a meeting of the chiefs of the island, men of the other two villages were given permission by Ngake to go to Motu Ko for a set period in order to fish from the reefs.

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A man catches his *baloma* bait in the morning. Besides his fishing gear and two or three coconuts for his day's lunch, he takes with him coconut-leaf mats (*polo launiu*) which provide protection from sun and rain and serve as sails. A mat leaning against the fisherman's back while he waits for a bite is easily thrown aside when strenuous activity is required to haul up the fish on the line before the sharks can take the fish from the hook. When the canoe is kedged to the reef and there is only a gentle breeze blowing offshore, a mat sail is used to prevent drifting onto the reef, thus obviating the necessity of paddling out from the reef again and again. A big sail in a fishing canoe would be cumbersome and would catch too much wind. A mat standing up in the canoe, with vertical midrib base and light guys running to outrigger booms providing support, gives sufficient belly to catch the wind and keep the canoe off the reef without dragging anchor.

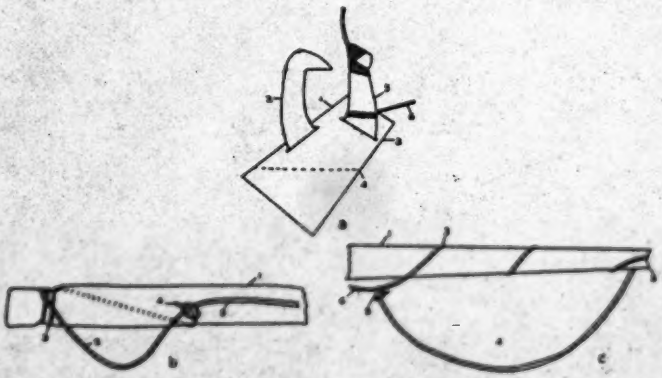

FIGURE 4.—Implements for fishing and bird noosing. *a*, fishhook with bait attached: any dead fish bait (*moana mate*) is attached to old style hook by removing head from bait fish and stripping off fillet (1), excluding backbone from belly backward so that flesh remains whole; hook (2) thrust through tail end (3) of fillet from flesh side, back through head end of fillet from skin side; fillet folded (4) along hook (dotted line), flesh side outward, skin side inward, and tail end of fillet lashed to shank (5) of hook, near shank knob, by transverse turns of bait string (6), fastened with half hitches. *b*, bird noose (*yele moana*): pole (1) about 12 feet long, 2 inches in diameter; noose (2) two-ply twisted sennit; one end of sennit passed transversely around notch end of pole (3), then down underneath two transverse turns; short free end (4) tied in square knot on bight; running end (5) passes down pole to bird catcher's hands at proximal end. *c*, fish noose (*kowyele*) (CB152): wooden support (1) of *puapua* wood about 6 feet long, ½ inch in diameter at proximal end, ¼ inch in diameter at distal end which is notched (2); noose cord (3) of strong, three-ply twisted *uao*, wound around support, passed over notch (2) to form noose (4); free end knotted on bight (5) and cord (6) passes to proximal end of support.

Tuku moana fishing from a stationary canoe outside the reef with dead bait differs in two respects from both *lulu* and *tauolo* fishing: *tuku moana* fishing is deep-sea hand-line fishing up to about 300 fathoms and involves

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226 Three methods are employed to catch *kavea*:

The first method is *lamalama kavea*. A lighted torch is thrust into the crab hole. The torch smoulders and the smoke forces the crab from its second hole, when it is promptly caught. In the second method (*yokayoka kavea*) a pointed stick is thrust into the ground or into holes to locate the crab. The hand is then put down into the hole to draw out the crab. The third method is *wakapoa kavea*. Coconut gratings are toasted over a fire until they become highly odorous and are then placed in the bush to attract the crabs. A few hours later a man visits the place and picks up the congregated crabs.

Crab hunting and killing is *wuli tupua*. The crab is picked up by the shell and, with a quick twist, the head is bent back from the mandibles and broken off. It is prepared for eating by roasting.

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Bird Catching

223 237 Of old, birds were caught principally for food, though the feathers were used secondarily as decorations for the hair and for the malo made of sennit. Today feathers are used as flies in fishing.

422 621 Birds are part of the reserve land foods and are tapu for most of the time. A decision to lift the tapu is announced to the people by the guards. The young men communally gather the birds which are divided among the people of the village. Small land birds are occasionally caught privately.

223 All birds are considered a great delicacy, but the young *lakia* bird is preferred. The owner of a new canoe might formerly obtain permission from 223 the village to visit the reserves to procure quantities of *lakia* for the feast 262 which marked the conclusion of the work on the canoe. The birds were shared among the people of the village and the canoe afterward referred to as *vaka kai lakia*.

231 223 Birds were never kept as pets or decoys. When caught as a fledgling, a bird was placed alive in a cone-shaped coconut-leaf basket (fig.16)[1] and transported back from the reserve therein. The basket with the bird was suspended from a tree near the cook house. The bird was fed with coconut flesh; a new basket was made when the bird grew bigger. When the bird matured, it was killed and eaten. Today a bird is occasionally kept in a small four-sided wooden box hung on a tree near the house. Its wings are broken to prevent escape. It is fed by the children and killed when mature. One man in Yato keeps two semi-wild *noo* birds tied by the leg to a log near his house. When they escaped one day and walked through the village, everyone ran before them with shouts of "Kai tangata!" (Man-eater). It was some time before the birds were recaptured and the village settled down again to normal routine.

223 1. Netting. The method of catching birds by use of the bird net (*aausta*) is termed *wakayei aausu* (to encircle the bird with a net). (For technical details of the construction of the net, see p. 209).

1. [See p.140, category IIb-- analyst.]

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The catcher goes during the day to a suitable pandanus tree close to other trees where the birds are wont to perch overnight. He trims the tree so that he can climb to the topmost branches without lacerating his body on the sharp spines of the pandanus leaves. Trimming away the leaves and projecting branches also makes it easier to drag the bulky bird net to the top of the tree. At dusk, he again climbs the tree. Then as the birds return from their sea feeding grounds, the catcher utters a guttural mimic cry. The bird is attracted within the radius of the net by the call, and is secured with a sweeping, downward scoop of the net. The mesh of the net is drawn in and the bird removed. It is killed by a sharp bite of the teeth on the back of the neck and thrown to the ground. Birds are caught by this method for about two hours at dusk. The birds caught are principally *ngongo*, but also *kotawa, noa, takupu, lakia, kako, ali, akiaki, wili, manu uli, tavake toto, tavake mokomoko,* and *matiku.*

An alternate use of the net is mentioned specifically for one bird, *kuka*. The method is termed *popo ki te tae* (slapping down the net). The *kuka* bird comes ashore at night to nest in the sand on the back beaches. The catcher, carrying his net, crawls up to the bird. When close, he pushes the net forward and places the belly of the net over the bird as it nests asleep. Then he takes the bird from under the net and kills it. The emphasis is on quietness and speed so as not to alarm other birds nesting close by.

Some nonresident birds, *ali* and *letyuleuu*, come to the outer beaches, not to lay, but to rest, flying low, and to feed. The catcher advances with his net toward a flock of birds, and scoops the birds into the net as they rise and fly low about him.

2. Hand catching. Birds are taken by hand (*tango manu, tango kotawa,* etc.) when it is quite dark and they have flown in from the beaches.

Before the birds have returned, the catcher climbs a suitable roosting tree, *puka*, coconut, or pandanus. He waits quietly until the birds are roosting. Then he reaches out his hands and grasps the birds. He wrings each bird's neck with a quick twist before it has time to squawk, drops it to the ground, and seizes the next. Most birds are best caught by this method when a fresh wind blows, whether or not there is a moon. The wind makes the outer ends of the coconut and pandanus branches sway so much that the birds come to roost close in to the trunk, where they are easily caught. Climbing bandages are used if the catcher has to wait for a long time in the trees. The hazards of bird catching by this method are well brought out in the conclusion of the story of Te Nana and Yi (p. 402). Birds caught by the *tango* method are: *kotawa, noa, takupu, ngongo, lakia, kuka, akiaki, manu uli, tavake mokomoko,* and *matiku.*

Catching by hand is applied in a special way to the wild grey ducks which rest temporarily in Pukapukan ponds or calm waters in their migrations southward over the atoll during November and December. The catcher places a basket (*ola*) over his head. Peering through the basket, he swims (*kakau*) with the minimum of effort, toward the place where the birds are resting, taking every precaution to make the basket look like drift material. When he comes close to the birds, he grasps them with his hands and kills them.

3. Striking. Knocking birds off branches with the hands or a stick is used especially for catching young fledglings nesting on the branches of the pandanus tree.

Two men go bird catching. One mounts the tree and catches the birds with the hand or knocks them (*hui* or *you*) to the ground with a stick. His partner stays on the ground, catches the birds as they fall, and kills them. This method is used for *lakia, kuka, ali, akiaki, manu uli,* and *tavake mokomoko.*

The method of striking down the birds with a pole is used for low-flying, nonresident birds. Two men go to the nesting places on the outer beaches. As the birds are disturbed and fly away very low, the catcher strikes them down with a long pole.

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223 His partner catches the birds on the ground and kills them. Birds caught thus are *ali, uili, manu uli, tavake toto,* and *tavake mokomoko.*

Catching birds by throwing stones or sticks is common. The catcher goes to the beaches armed with throwing stones of coral, or with a number of short, heavy sticks about 2 feet long. He comes near the feeding or nesting places of the birds and attempts to kill them by throwing (*kanu*) his missiles. This method is used for *uili, manu uli, tavake toto, tavake mokomoko, kaleva, lupe,* and *matiku.*

4. Lure used for the tropic birds.

The catcher collects a handful of the young white leaves of the pandanus tree. He goes to the place where the birds are resting or feeding and waves the leaves in the air (*wukaikaika*), at the same time uttering a guttural cry, "I ka! i ka!" The waving of the lure and the cry attract the birds which come fluttering overhead. They are then netted, knocked down, or caught in the hands of the netter or his assistant.

5. Noosing and snaring.

A noose (*yele manu,* fig. 4,*b*) of the required size is attached to a pole which is thrust out along the branches to the place where the bird is nesting. The noose is placed over the neck of the roosting bird and pulled tight, strangling the bird. Then the pole is pulled in while the bird is disengaged and thrown to earth. The pole noose is reset and pushed out again for the next bird. This technique is used for *kotawa, noa, takupu, ngongo, lakia, kaka, akiaki, uili, manu uli,* and *tavake mokomoko.*

[284] A variant method is to use the noose without the pole. The noose (again called *yele manu*) is made with a square knot on a bight and held in the hand. The catcher crawls up to the bird nesting in the sand and drops the noose over the bird's neck, pulls it tight, and strangles the bird. Noosing by this method is used principally for *kulu.*

Two methods of snaring birds also involve the use of the noose principle. The bird snare (*maunga*) is described in figure 48,*b*. A piece of beach is chosen which the birds are in the habit of frequenting. The *maunga* is placed on the ground and firmly anchored by a sennit cord passing from one end of the snare pole to a large coral stone near by. The catcher gets behind a group of birds and gently drives them in the direction of the snare. Whenever the birds stop moving, the catcher stops; when they move again, he directs them toward the nooses. The birds hop along, come to the *maunga,* which they are unable to avoid owing to the projecting wings, advance through the nooses, and are caught by the feet. The catcher comes up to kill them. Birds so caught are *kawe, tuli, kolili, popopolouenga, kiu, talakoko,* and *taiko.*

A second type of snare is the coconut-shell *maunga agaipu* (fig. 48,*a*). Five or six of these are set up on a suitable beach and coconut flesh is strewn about the ground. The bird is attracted by the coconut, inserts its head into the nut to peck at the flesh and entangles its feathers in the sennit fiber nooses. The bird struggles to escape, usually overturning the coconut which falls on top of it. The bird is removed and the snare reset. This snare is used for *tuli, kolili, popopolouenga, kiu, talakoka,* and *taiko.*

6. Line catching. Birds are also caught by a method involving the use of fishline. One variant of this method is used for birds (*talaiuc* and *tala*) that skim the water close to shore looking for small fish food.

To the end of a small fishline a gorge (*au*) of fishbone is fastened. *Kaloma* bait is tied to the gorge and the line is laid along the beach at water's edge. The birds come down for the bait, the gorge sticks in their throats, and they are firmly caught. A second variation of this method, called *wukaolo manu,* is used for birds that hop about feeding in the shallows and wet beaches. A piece of the abdomen of the hermit

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223 crab (*unga*) or, alternately, a bait of small periwinkle meats or centipedes (*vili*) is tied to the ends of each of several lines which are laid across the beach, the other ends being fastened to a near-by tree or to stakes. The birds swallow the baits, are unable to disgorge them, can not fly away, and are caught. *Kawe* and *matiku* birds are caught thus with *unga* bait, *tuli* with periwinkle or centipede bait.

7. Fowling line, generally used to catch sea birds.

A length of *uuo* line is attached at one end of a pole from 6 to 9 feet long. A piece of coral stone weighing about 2 ounces is fastened to the free end of the line. When a bird has been attracted close to the tree in which the catcher hides, or when it circles low over the beach, the line is thrown out. The weight of the stone carries the line round the bird. The line encircles the bird several times and entangles its wings. It is then drawn to the catcher. No decoy birds were used in this method of bird catching, nor was the stone weight shaped in any way. The use of line, shaped stone, and decoy bird is reported for Apemama by Woodford (19,p.294), the use of line and shaped weight for Vaitupu (19,p.294), and for Nauru (14,p.289).

House Building

342 476 The framework for small houses is erected by the owner and a few of his friends. If a big house is contemplated and speed is required, the kinship group is mobilized and the work continued until the frame is completed. The able-bodied men work on the frame while the older men work near by making the sennit for the lashings. Today the framework of most small houses is fitted together in some shady, cool place whether the actual site of the new house is unoccupied or already occupied by an old house which is to be replaced. When the frame is completed, it is taken to pieces, transported to the house site and there put together again. The roof framework is fixed together permanently at the work site and then bodily transported to the house site. In big houses, however, the frame is usually erected on the house site in the first instance. The house framework is usually built during the cooler weather just after the winds swing round to the southeast.

342 Unless the house is very small, the thatching (whether of a new or old house) is done by a working party. The sides and ends of each roof are divided into sections (*uonunga* or *tuta*) of a certain width running from eaves to ridgepole. Two to three sections are generally reckoned for the side of an average house. The pile of roof sheets for each section is termed *yinaki lau*. The type of thatching desired, whether *ato tele* or *ato yinaki*, and the distance between each successive roof sheet is specified beforehand.

342 476 431 The owner of the house arranges with as many friends as necessary, each to assume responsibility for preparing the roof sheets and sennit, and for thatching one section of the house. Each man may elect to do all the work himself or he may call in a group of friends to help him with his section. The work is paid for by a food division, one share being set aside for each section that has been contracted out. This share is redivided among the helpers in each section. The amount of food constituting a share depends

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A small receptacle or container of coconut leaf is sometimes made to transport young birds from the reserve islets to Wale. The containers function also as bird cages.

Receptacle C8144 (*pupu manu*) is made from a length of coconut midrib, 14 inches long and carrying 19 leaflets, cut from the tip end of a coconut leaf. The plaiter works with the midrib base uppermost, and starting from either end plaits the leaflets in a close check to form a cone 20 inches long, base diameter 4 inches (fig. 16). The base is finished with a three-ply braid, and the two free ends of the braid are knotted together. When a bird is placed inside the cone, the base is fastened together by interlacing a leaflet from side to side through and under the base braiding. If the receptacle is used to transport flowers or plants from the islets, the cone-shaped container is plaited round the objects.

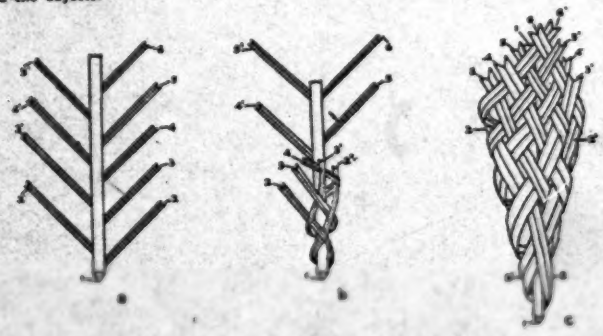

FIGURE 16.—Commencement of cone-shaped receptacle (*pupu manu*). *a*, section of midrib (1), carrying nine leaflets (2, 3, 4, 5, 6, 1′, 3′, 4′, 5′): broad base of midrib uppermost. *b*, commencement of plaiting: leaflet 1′ carries across from left to right and engages leaflets 2, 3, carried across to left; leaflet 3′ carries to right and engages leaflets 2, 3, 4; process continues, alternately bending left side leaflets to right, right side leaflets to left, plaiting leaflets in check. *c*, result after several plaiting strokes: leaflet 1′ has engaged leaflets 2, 3, 4, 5, 6 and has passed around under cone; similarly, leaflet 2 has engaged leaflets 1′, 3′, 4′, 5′ and passed to other side of cone; other leaflets, those from left side functioning as dextrals, those from right side as sinistrals, plaited together in open leaf check; only six leaflets on each side figured, but process continued with all leaflets on midrib base; when cone is large enough, free ends of leaflets braided in three-ply braid, and two ends of braid knotted together, forming fixation edge for mouth of receptacle.

Platters (*laulau*) on which food is served are characterized by a natural concavity formed by the dull side of the coconut leaflets when plaited or folded together. All pudding platters for the talo dish called *olo* have the braided finishing edge; all fish platters have the overhand knot finish; all platters for the talo dish called *loloi* have the non-braided, double-knot finish. All platters are approximately 18 inches wide and 9 to 12 inches deep.

Platter C8181, *laulau ava olo*, is used for serving the talo pudding (*olo*). The platter has the Pukapukan turned-back, two-strip commencement. It is plaited in open

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of one ply in passing over to the middle position. The under surface of the five-ply braid is termed *aloalo* and is marked by a pronounced transverse concavity. Shreds of coconut fiber left by the braiding are not cut off but are left, presumably to ease the rub of the malo against the skin. The outer surface (*tua*) of the malo is flat and smooth because the shreds are cut off. Braiding is very tight and strong. Informants mentioned that the utmost a good worker could braid each day was about 12 inches, and from this his hands became roughened and torn by tugging at the braiding to make it tight.

A sennit malo observed in the field was of five-ply braid, 33 feet long, ½ inch wide, and ¼ inch thick. The commencement end (*kamatanga*) consisted of a two-ply twisted loop, 1¼ inches long. This loop was hitched over a bracing stick in braiding and the four ends braided as a four-ply braid for 1 inch. A fifth ply was then added and the rest of the malo braided five-ply. The finishing end (*wakaotinga*) was fastened with an overhand knot, and a length of two-ply twisted sennit, 4 feet long, 1/16 inch in diameter, was knotted to this end. This length of twisted sennit (*kaua ki malo*) is used to secure the malo to the waist when worn or to fasten it in a flat disc when stored.

Malo C8146 is made of two shorter lengths of five-ply sennit joined together by knotting. One section of the sennit is ½ inch wide, 3/16 inch thick; the other section ¼ inch wide, ½ inch thick. A malo is wound for storage in the shape of a disc (*iko*, pl.3,*C*). The malo is laid on the ground, the commencement end folded in and the rest of the sennit wound round this core to produce a flat disc 11 inches in diameter. The turns are held together by the *kaua ki malo* cord which passes from the circumference through the center hole of the disc and back to the circumference again where it is looped round the first turn. The free end is passed round the circumference for 3 inches, then passed down to the center hole, and back to the circumference again, these turns being repeated at every third inch round the circumference.

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The ordinary, quickly made, climbing bandage (*kaunga*) is made from strips of coconut midrib (*kalava*), chewed to soften the fibers, and then looped by fastening the ends with a reef knot. The coconut climbing bandage (C8057), *kaunga kake niu* (climbing bandage to climb coconut tree), is 30 inches long, 5/16 inch thick. More permanent and stronger bandages, braided from pandanus roots, are used by a bird catcher who wishes to be sure that a bandage will not break and throw him to the ground during the several hours he remains in a coconut tree. Young aerial roots of the *yalu* species of pandanus are cut as long as possible and baked in the oven or heated over a fire. The roots are pounded with a piece of wood until the fibers are soft and flexible. Strands of this material are made into a three-ply braid, the ends knotted to form a loop. Climbing bandage C8159, (*kaunga yalu*) is three-ply braid, 45 inches long, ¾ inch wide and ¾ inch thick.

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Men today spend much of their time at braiding sennit and *waa* fiber for ropes and fishlines. When the price of copra was high, many European fishlines and ropes were in use, but low copra prices have sent the men back to native materials though they consider cordage making a laborious job.

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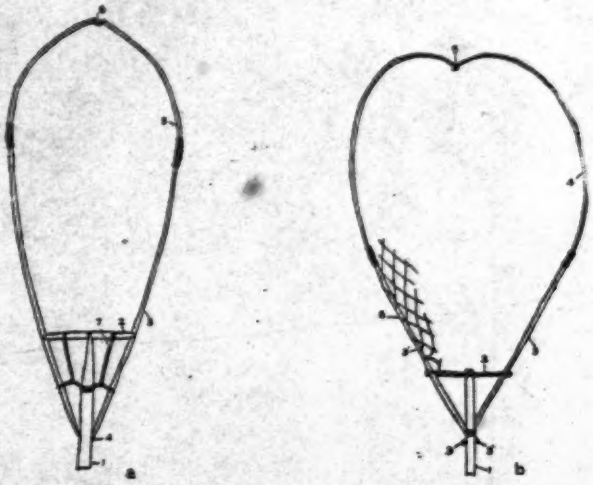

FIGURE 45.—Flying-fish and bird nets. *a*, framework of flying-fish net (*tar maloio*) (CB067): 1, handle (*kautar*) of *puapua* wood, 7 feet 2 inches long, greatest diameter 1½ inches, diameter at crossbar ⅝ inch; head of handle slotted (*utupo*) to hold crossbar (*teke*) of wabeawea wood (2) which is 10⅝ inches long, ⅝ inch in diameter; crossbar slotted at each end to receive rods (*uawpauwapa*) of pandanus wood (3) 3 feet long and ⅜ inch in diameter at ends where they fit against handle (4); other ends of rods are ½ inch in diameter and are joined to lighter rods (*matoi*) (5) of *lakau ydli* by scarf joins; each *matoi* is 20 inches long and ⅜ inch in diameter; the other two ends of two *matoi* are notched, brought closely together (6) and joined by continuous transverse turns of cord; lashing of crossbar to handle strengthened by suspensory lashings (7). The lashing of stout rods (*uawpauwapa*) to handle, shown in figure 46, *a*, *b*, *c*; lashing of head of handle to crossbar and of ends of crossbar to stout rods is in common alternating curves pattern; lashing of stout rods to lighter rods is by transverse turns around scarf join, commencement ends and finishing ends being buried. The suspensory lashing consists of transverse turns around handle and across to stout rods on either side, then transverse turns around cross lashing and crossbar; cross turns and suspensory turns are seized to make lashing taut. Net is 18 inches deep, with greatest width at mouth 19 inches. *b*, bird net (*uwete*) (CB145): 1, handle of *puapua* wood 10 feet long, 1¾ inches at widest diameter, and 1 inch in diameter at head; 2, crossbar of *ngangie* wood is 11⅜ inches long, ½ inch in diameter; 3, 3, stout rods of pandanus wood, 2 feet 6 inches long, ⅜ inch in diameter; 4, lighter rods of *lakau ydli* wood, 3 feet long, ⅛ inch in diameter at join with stout rods, ¼ inch in diameter at distal point (5) of frame; in attaching frame to handle, crossbar (2) is first lashed to upper side of handle; both stout rods (3, 3') laid over upper sides of crossbar and under handle, two ends of rods projecting slightly beyond handle, 3' to right, 3 to left; lashing of rods to handle, of rods to crossbar ends, and of crossbar to head of handle are all of alternate curves pattern; crossbar first lashed to head of handle; free end of cord carried to left end of crossbar and lashed end to crossbar; free end carried back across crossbar to opposite end of crossbar and

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223 284 lashes rod to crossbar end; free end of cord carried down to handle and lashes ends of rods of handle; finally, free end of cord carried down handle, making transverse turns around handle at intervals of 15 inches; 4 feet from proximal end of handle, cord makes 8 transverse turns around handle and fastens with overhand knot. This lashing enables the bird catcher more quickly to draw in his net by providing a firm hold for his hands. Light rods (4) attached to stout rods (3, 3′) by scarf joins lashed with transverse turns on one side and oblique transverse turns on the other; two ends of light rods overlap (5) and are fastened together; natural springiness of thin rods makes net framework heart-shaped. Net attached to handle before ends of light rods are lashed together; each rod passes through marginal meshes (6) of net, net being attached directly and without use of marginal cord; proximal end meshes of net are gathered on a double cord which loops loosely around head of handle below crossbar and has two ends knotted together. Net is 29 inches deep; greatest width at mouth 31 inches.

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171 227 286 Netting needles (*tui* or *uatua*) and mesh gauges (*yika*) are used. Of two types of needle, the *uatua* type (fig. 44,*a*) is similar to those used in other parts of Polynesia. One end of the netting cord is passed through the hole and knotted. The rest of the cord is wound longitudinally between the two slots; the knotted end prevents the cord from slipping off the needle when only a few longitudinal turns remain on it. The second type of netting needle (*tui* or *yuki*, fig. 44,*b*) is loaded by making a clove hitch on it at the point of the notch and just forward of the terminal knob (which prevents the clove hitch from slipping off the needle) with the free end of the netting cord. A length of about 30 inches is measured off and another clove hitch made round the needle. This process is repeated until a sufficient length of cord is attached to the needle, hanging from the terminal knob end in double lengths of about 15 inches. In using the needle, a double length of cord is slipped from the blunt point of the needle. When this length has been used up, a second length is slipped from the needle and the process is repeated as the netting advances. In slipping the cord from the needle, the clove hitch in the cord unties itself. Needles are made in various sizes to suit different sized meshes.

The *yika* gauge is a flat rectangular piece of wood scraped smoothly or a piece of turtle shell. A mesh gauge of turtle shell (CB131), used to make the flying-fish net in the museum collection is 3⅛ inches long, ⅜ inch wide and ⅛ inch thick. The edges are polished smooth. Mesh gauges are of different sizes according to the size of mesh required.

TECHNIQUE

171 227 286 To make a net is *tui te kupenga*; a mesh is *mata kupenga*. The Pukapukan technique of netting (fig. 44, *c*) corresponds to the Samoan method described by Buck (27, pp. 470-472) with one variation.

The netting needle is loaded and the required mesh gauge selected. An assistant holds a light supporting rod of wood around which the first meshes are made, the assistant judging their size by eye. This variation on Samoan starting technique is the same as the Manihikian technique save that a supporting rod replaces the supporting cord used in Manihiki. (See 29, p. 161, fig. 73.) When the Pukapukan netter has made the first row of meshes he transfers these meshes from the rod to a supporting cord. The ends of the cord are knotted and the cord looped round a stick placed in the ground or else round the toe of the netter. As each row is completed, the net is turned and successive rows are added by the same technique.

One Pukapukan method of narrowing bag nets is by the addition of extra meshes, the common Polynesian technique. A second method is by making a netting knot round two or more meshes. Thus in the bird net and in the flying-fish net described below, the bottom of the net is narrowed by gathering together under the thumb four successive meshes and making the netting knot round these four meshes together (fig. 44,*d*). The

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The flying-fish practice net (*tae penu*) used by young men to catch pandanus keys thrown at them in practice sport is of similar shape to the flying-fish net, but smaller.

It consists of a handle of *wetau* wood, 4 feet long and 1½ inches in diameter, a crossbar 8 inches long, ¼ inch in diameter, and two stout rods of pandanus wood, 3 feet long, which are fastened to handle and crossbar, the ends bent close together and tied without the intermediary of lighter rods (*matai*) used in the flying-fish net frame. The lashings of framework and attachment of net to frame are similar to those of the flying-fish net. The practice net is made of the two-ply twisted fiber from the aerial roots of *yulu* pandanus. The net is 13 inches wide at the mouth, 18 inches deep.

The large bird net (*wnata*, fig.45,*b*) differs in shape from the flying-fish net.

The net framework is attached to the handle in such a way that the distal end of the framework rises at an obtuse angle from the plane of the handle. The distal point of the frame is 10 inches higher than the plane of the handle. The framework when viewed sideways presents the shape of an enlarged spatula. When the bird catcher brings down the net upon a flying or roosting bird, the net is reversed so that the distal end of the frame is lower than the plane of the handle. A bird flying from the net is more likely to be caught by the downward projecting spatula-shaped net than it would if the net frame were in the same plane as the handle. The frame and handle are made of light wood so that the net may be easily used in the tree tops. The net itself is made of fine two-ply twisted sennit.

TRAPS AND SNARES

Because the fauna of a coral atoll is extremely simple, there are in Pukapuka only two types of bird snare and a form of the widely distributed western Polynesian rat trap.

The construction and operation of the rat trap (*vaka hiole*) are shown in figure 47. The trap is baited with mature coconut flesh (*ipiipi*) and set in a runway made by rats. The rat is removed by the owner of the trap, who resets the bait stick and spring mechanism.

The coconut-shell bird snare (*maanga kui*) is shown in figure 48,*a*. Another bird snare (*maanga tuli*), shown in figure 48,*b*, is set on the beach, weighted down with stones, and the birds driven through it.

Though not strictly traps or snares, wooden structures (*pa wonu*) in which turtles are kept may be described in this context.

Stakes of *puapua* or *pukamea* wood, each about 5 feet long and 1 inch in diameter, are driven into the sea bottom a few yards from low water level of the beach. The stakes are arranged about 1 inch apart to form a rectangular enclosure 3 feet square, and 4 feet high. The stakes are bound together at top and bottom with horizontal poles and a continuous lashing which makes transverse turns round vertical and horizontal members. Baby turtles, caught as they emerge from their shells, are placed in these enclosures. They are fed regularly on squid and octopus until they are mature enough to be killed for a special food division. The size of enclosures observed varied according to the number of turtles placed within. An enclosure of the above size housed two turtles with shells about 12 inches long. Bigger structures contained five or more small

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Soul Trap

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Though I believe the so-called "soul trap" was not used in Pukapukan culture but was only an ideological concept of one of the many traps with which the Underworld was full (p. 329), nevertheless particulars of the soul trap sold by Gill in 1876 to Sir Wollaston Franks for the British Museum may be given here. The following description as well as the print of the central portion of the trap (pl. 6) has been forwarded to me by Mr. Adrian Digby of the British Museum.

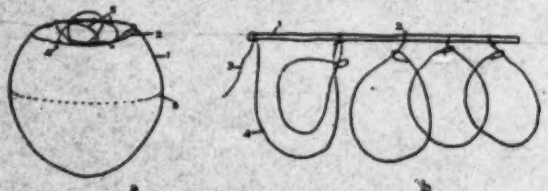

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Figure 48.—Bird snares. *a*, snare for *kui* birds (*maenga kui*) (C8135): drinking nut (1) 4 inches high, with top removed to form opening (2) 3 inches in diameter; flesh removed from inside upper portion of nut down to dotted line (3); five holes bored through shell just below rim (4) and a length of prepared coconut fiber passes through each hole to be fastened by knot; free end of each fiber forms a slip noose (5); snare set by making five nooses which pass through each other and so block opening. *b*, snare (*maenga tuli*) (C8060) for *tuli* birds, section only of snare shown: stick (1) section of coconut midrib, 4 feet 4 inches long, ⅜ inch in diameter; lengths of prepared coconut fiber (2) knotted at regular intervals along stick; fibers each knotted into slip nooses of which there are 23 on stick, each about 2½ inches in diameter; long fiber (3) with loop at end knotted to each end of stick and loop dropped over peg to anchor stick in place; a fixed loop (4) is knotted to each end of stick and placed over peg or held down with a stone to give more secure placement to snare; wings (*fa*) of coconut leaves and stones fan out at an angle of about 145 degrees from each end of stick to ensure that birds do not escape around ends of snare.

The trap (no. 9925, Christy Coll., British Mus.) has a total length of 19 feet 4½ inches and consists of eight loops (of which only six are shown in pl. 6) made by binding three-ply braid round a core. This core is made of double lengths of three-ply braided sennit, loose coconut fibers (probably those adhering to the roughly made sennit), and some two-ply twisted *uso* fiber. The loops are lashed in pairs to a long three-ply sennit braid which tapers at both ends. The shorter end (F) terminates in a two-ply twist about 2 inches long. The material used in lashing loops to the central cord is a combination of coarse three-ply braid, with either a fine three-ply braid or a two-ply twist. No details of the lashing are available. Mr. Digby suggests that part of the material used in lashing the pair of loops (D) is a small quantity of bark cloth. But bark cloth was never made in Pukapuka, and it is probable that the material has been confused either with coconut leaf stipule (*kaka*) which is not generally used for lashings because of the weakness of the fibers, or else with thick strips of *uso* fiber.